

Impact of Inflammatory Bowel Disease in Colonic Resection for those Hospitalized with *Clostridioides difficile* Colitis: Insights from the National Inpatient Sample

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Introduction

- *Clostridioides difficile* (*C. diff*) is a Gram-positive bacterium and a common nosocomial infection.
- Pathogenic *C. diff* can range from a mild diarrheal illness to severe, life-threatening colitis.
- While hospitalization, recent antibiotic use, older age, and inflammatory bowel disease (IBD) are known risk factors for developing *C. diff*, understanding of specific risk factors for developing more severe disease is lacking.
- Previous literature has shown increased mortality for patients with IBD who become infected with *C. difficile*, however, a connection between IBD and need for resection have no been established.

Aim/Question

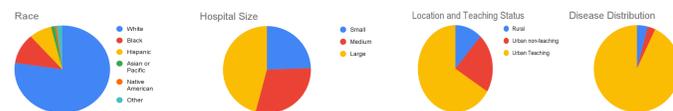
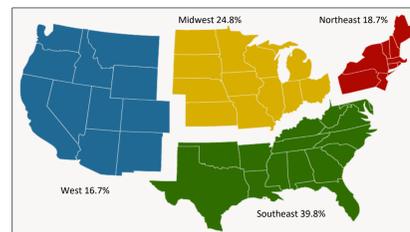
Is there an association between IBD and need for colonic resection in patients hospitalized for *C. diff* infection, and how does this compare for patients with ulcerative colitis (UC) versus Crohn's disease (CD)?

Methods

This is a retrospective cohort study using the 2019 National Inpatient Sample (NIS). Inclusion criteria were a principal diagnosis of *Clostridioides difficile* colitis and age >18. The patients were divided into two groups: those with IBD and those without IBD. IBD was further subdivided into those with UC and those with CD. The primary outcome is rate of colonic resection. Secondary outcomes were: 1) mortality 2) rate of colonoscopy 3) length of stay 4) total hospital charges. Confounders were adjusted for using multivariate regression analysis with the following confounders: sex, income, race, insurance, Charlson comorbidity index, hospital bedsize, location, teaching status, and region

Population Characteristics

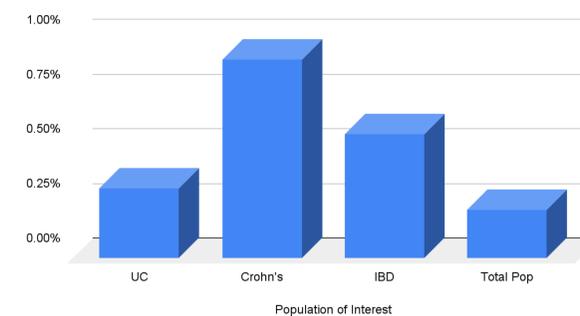
76,324 patients
Mean Age: 66.66



Results

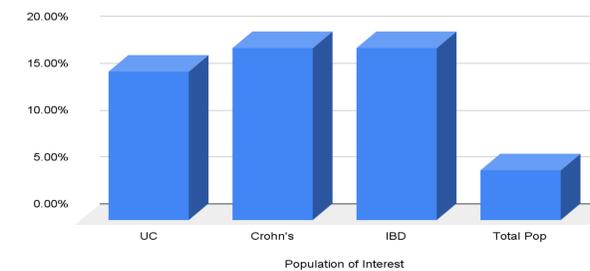
- 0.22% of the total population studied underwent resection.
- Compared to the rate of resection in patients without IBD, those with IBD had a 180% increase in odds of colonic resection when compared to patients without IBD while adjusting for confounders.
- This difference was most notable in the CD subgroup (OR of 4.41).

Figure 1: Percentage of patients who underwent resection



- Patients with IBD were also more likely to undergo colonoscopy (OR 3.4).

Figure 2: Percentage of patients who underwent colonoscopy



Results (continued)

- Those with IBD had hospital charges on average \$6,799 more than those without IBD.

Conclusion

Those with IBD face an even higher burden of disease than those diagnosed with *C. diff* without IBD. Both forms of IBD increase the likelihood of colonic resection as a consequence of infection of *C. diff* while hospitalized. Those with CD were noted to have stronger odds of this outcome compared to those diagnosed with UC. With such a strong increase of unfavorable outcomes amongst patients diagnosed with IBD, hospitals should consider implementing stronger measures to prevent nosocomial *C. diff* infection amongst the IBD population that become admitted to their facilities.

Acknowledgments

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2. Rezapour, M., et al., *Clostridium difficile* co-infection in inflammatory bowel disease is associated with significantly increased in-hospital mortality. *Eur J Gastroenterol Hepatol*, 2018. 30(9): p. 1041-1046.
3. Lucado J, Gould C, Elkhouser A. *Clostridium Difficile* Infections (CDI) in Hospital Stays, 2009. *Statistical Brief #124*, 2012. Jan. In: *Healthcare Cost and Utilization Project (HCUP) Statistical Briefs* [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2006 Feb-. PMID: 22574332.